Flood Plain Management
the past is prologue

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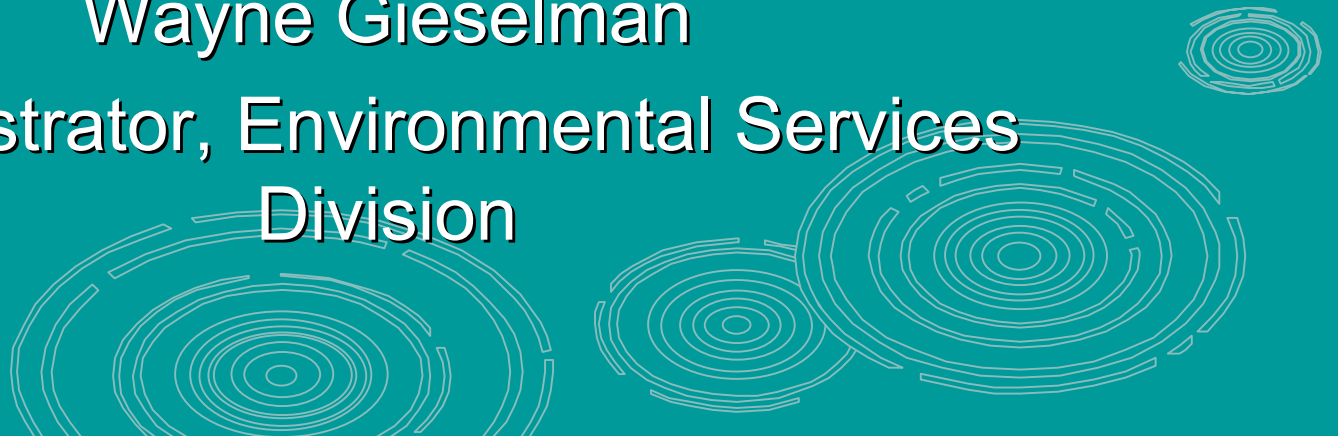
– imagine the future

Comprehensive Flood Plain Management Program

➤ Flood plain maps
➤ Engineering and permitting expertise
➤ Local program oversight and assistance
➤ Dam permitting
➤ Safety compliance and inspections
➤ Disaster response

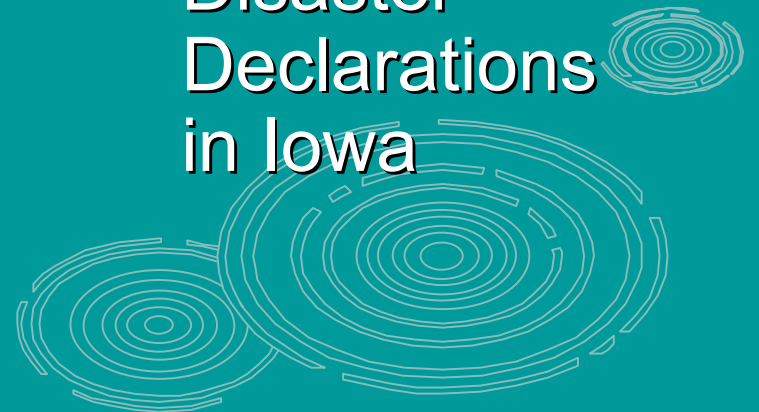Fully funding a comprehensive program
would cost $3 million per year

Floods happen

They always will

- ➢ Serious flooding has occurred in 8 of the last 15 years
- ➢ Resulting in 8 Presidential Disaster Declarations in Iowa

The public costs of flooding

- Demand for publicly-funded flood control works
- Rescue and relief efforts
- Interruption of commerce, tax base
- Damage to public facilities
  - Roads and bridges
  - Water, waste water treatment plants
  - Public records
  - Critical facilities like hospitals

Modify flooding:
the "structural" approach

➤ Dams and reservoirs
➤ Levees and floodwalls
➤ Channel changes
➤ Land treatment (watershed management)
➤ Onsite detention (e.g., "upland" storage ponds)
➤ All have some limitations
  - physical constraints
  - cost
  - environmental
  - limited design life
  - legal, etc.

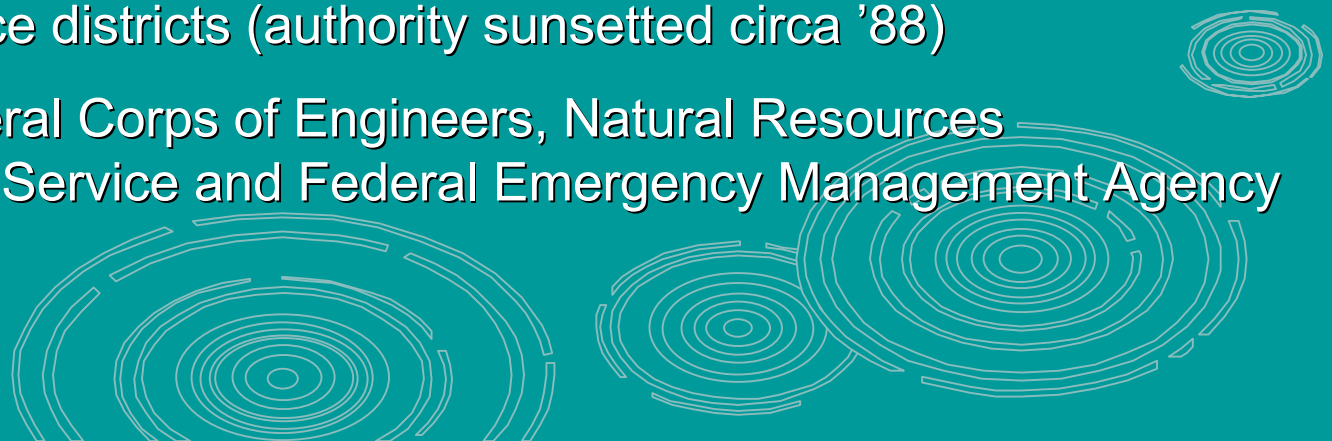# Modify flooding:
the "structural" approach

State

➢ DNR

- Authority to construct flood control works (455B.264)

    goes back to 1949 (Iowa Natural Resources Council)

Local

➢ Local governments
➢ Drainage and levee districts
➢ Soil and water conservation districts
➢ Flood control districts
➢ Water resource districts (authority sunsetted circa '88)

Partner with federal Corps of Engineers, Natural Resources
    Conservation Service and Federal Emergency Management Agency

Modify susceptibility to flooding:
the "non-structural" approach

➢ Floodplain regulations

➢ Development / redevelopment policies

➢ Flood proofing (retrofit existing buildings)

➢ Disaster preparedness

➢ Flood forecasting / warning

Current Picture

➢ Local Programs
- Only 136 communities with delegated programs
  - Lack of training and expertise
  - Lack good data and maps to do planning

Current Picture

- NFIP
  - 600 of 947 cities have flood hazard areas identified by FEMA
  - Only 10 – 20% of damaged buildings covered by NFIP
  - 129 communities have maps but do not participate in NFIP

Current Picture

➤ Misunderstood Risk

- Few people have flood insurance buildings outside the 100-year flood plain

- Property owners may not know risk

  - *"You're not in the flood plain"*

Current Picture

- 2008 floods far exceeded 100 year flood in many areas
  - Difficult to justify flood protection policies based on such a large, rare event

"You don't build a church to hold the Easter crowd." former Iowa Water Commissioner

- But you have to expect the Easter crowd to show up and plan for it.

Current Picture

- ➤ Maps
    - Only about 1/3 of state has accurate up to date maps
    - Most only show 100 year flood plain
        - Few digital maps
        - Not accessible to planners
        - Cannot be incorporated into other computer tools (i.e., CAD, GIS)
        - Not easily updated

Flood Plain Management

➤ Planning done by local communities

➤ Plans should…

- Guide wise development decisions
- Be based on high quality data

➤ Promote flood insurance

Flood Plain Management

➢ State's Role

- State-wide management plan
  - Identify high risk areas
- Regular training for local officials
- State-wide technical standards
- Oversight of local permitting programs

Flood Plain Management

➢ Mapping Program

- Use LiDAR topography data already acquired
- Detailed flood studies
- Digital flood maps for entire state

LiDAR + Flood Study = Digital Flood Map

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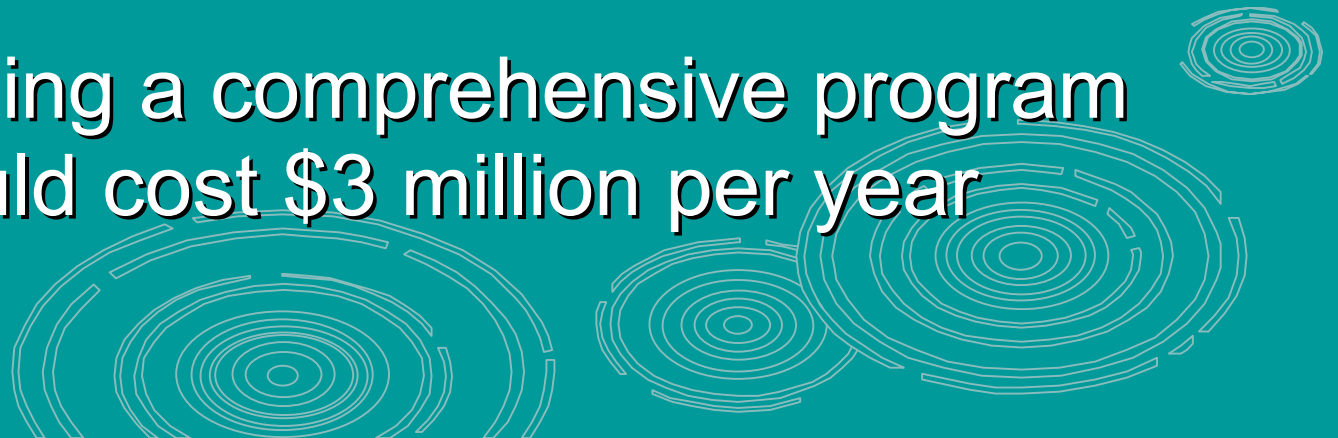
Questions?

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